

## **AMENDMENTS TO THE SPECIFICATION**

Please replace paragraphs 1-3, page 4, lines 4-15 with the following:

"In a particular embodiment, the cover sheet has a water vapor transmission rate of at least about 30,000 MOCON value. For example, the cover sheet may be a spunlace laminate material having a water vapor transmission rate of about 40,000 MOCON value. This spunlace material may comprise a rayon and film combination having a MOCON value of about 39,500, for example about 39,950

In still another embodiment, the cover sheet may have a water vapor transmission rate of at least about 50,000 MOCON. For example, the cover sheet may be a bonded carded web material having a MOCON value of about 52,500, for example about 52,612.

The back sheet may be, for example, a highly breathable stretch thermal laminate (HBSTL) material having a water vapor transmission rate of at least about 10,000 MOCON value."

Please replace paragraph 2, page 10, lines 14-33 with the following:

"With articles 10 according to the present invention, the initial neutral buoyancy characteristic is believed to be a result of a unique permeability relationship between the back sheet 14 and cover sheet 12. The cover sheet 12 preferably has a relatively high permeability to air and water vapor, while the back sheet is generally impermeable to liquids but has a generally high water vapor permeability. The cover sheet 12 can be constructed of any woven or nonwoven material which is easily penetrated by bodily fluids contacting the surface of the cover. Desirably, the cover sheet 12 has a water vapor permeability of at least about 30,000 MOCON value, or at least about 50,000 MOCON value. Specific examples of suitable cover sheet materials are given below. Also, the back sheet 14 should have a water vapor permeability of at least about 20% of that of the cover sheet 12. The respective permeabilities are selected such that entrapped air may eventually escape from the article upon flushing regardless of the orientation of the article in the water. In this manner, the article is less likely to tip or turn over due to a high buoyancy mismatch between sides, as would be the case if

entrapped air is retained between a vapor impermeable back sheet 14 and absorbent material 18. Also, the permeabilities are selected such that a sufficient volume of the entrapped air is initially retained in the article overall so as to provide the article with an initial neutral buoyancy. The entrapped air should escape at a rate such that the article eventually sinks within about 7 days after flushing.”

Please replace paragraph 1, page 11 lines 1-23 with the following:

“A suitable technique for determining the “breathability” of a material (the ability of the material to permit gases, such as water vapor, to pass therethrough) is a test for the water vapor transmission rate (WVTR) value of the material as standardized by INDA IST-70.4-99, entitled “STANDARD TEST METHOD FOR WATER VAPOR TRANSMISSION RATE THROUGH NONWOVEN AND PLASTIC FILM USING A GUARD FILM AND VAPOR PRESSURE SENSOR.” The INDA procedure provides for the determination of WVTR, the permeance of the film to water vapor and, for homogeneous materials, water vapor permeability coefficient. The INDA test method is known to those skilled in the art and need not be set forth in detail herein. However, the test method is summarized as follows: A dry chamber is separated from a wet chamber of known temperature and humidity by a permanent guard film and the sample material to be tested. The purpose of the guard film is to define a definite air gap and to quiet or still the air in the air gap while the air gap is characterized. The dry chamber, guard film, and the wet chamber make up a diffusion cell in which the test film is sealed. The sample holder is known as a Permatran-W Model 100K manufactured by MOCON/Modem Controls, Inc., of Minneapolis, Minn. A first test is made of the WVTR of the guard film and air gap between an evaporator assembly that generates 100 percent relative humidity. Water vapor diffuses through the air gap and the guard film and then mixes with a dry gas flow which is proportional to water vapor concentration. The electrical signal is routed to a computer for processing. The computer calculates the transmission rate of the air gap and guard film and stores the value for further use.

Please replace the equation, page 12, lines 1-13 with the following:

$$TR_{\text{test material}}^{-1} = TR_{\text{test material, guardfilm, airgap}}^{-1} - TR_{\text{guardfilm, airgap}}^{-1}$$

Calculations:

WVTR: The calculation of the WVTR uses the formula:

$$WVTR = F_{\rho_{\text{sat}}}(T)RH/A\rho_{\text{sat}}(T)(1-RH)$$

where:

F=The flow of water vapor in cc/min.,

$\rho_{\text{sat}}(T)$ =The density of water in saturated air at temperature T,

RH=The relative humidity at specified locations in the cell,

A=The cross sectional area of the cell, and,

$\rho_{\text{sat}}(T)$ =The saturation vapor pressure of water vapor at temperature T.

WVTR is measured in units of grams of water per square meter of material per 24 hours ( $\text{g}/\text{m}^2\text{-24 hrs}$ ) ("MOCON" units)."

Please replace paragraph 1, page 13 lines 1-16 with the following:

**Example**

Interlabial absorbent articles were made (10 samples) with a cover sheet of a spunlace laminate material of rayon and PET/PP film having a MOCON value of about 39,947 and a basis weight of 30 gsm, and a back sheet of XEM 244 film (0.75 mil.) treated with PEG 400 (polyethylene glycol at a 0.5% add on level). The absorbent material was a blended layer consisting of 60% cotton and 40% rayon. The treated XEM 244 film has a contact angle with water between about 100 to 120 degrees. The rayon side of the cover sheet has a contact angle with water of between about 40 to 45 degrees. The film side of the cover sheet has a contact angle with water of between about 90 to 100 degrees. Articles were made with the cover sheet having the rayon side as the top (outward) surface. Separate articles were made with the cover sheet having the film side as the top (outward) surface. The sets of articles were otherwise identical. The articles were separately tested in the flush test as set forth below. The articles having the rayon top surface had a sinking rate of approximately 30%. The articles having the film top surface had a sinking rate of about 70% during the test period."

Please replace paragraphs 1-3, page 17, line 1 through page 18, line 5 with the following:

"A suitable cover sheet material may have a water vapor transmission rate (WVTR) of at least about 30,000 MOCON value. For example, the cover sheet may be the spunlace material described above having a MOCON value of about 40,000, more particularly a value of 39,947. In an alternate embodiment, the cover sheet may have a MOCON value of at least about 50,000 MOCON value and may be, for example, a bonded carded web material.

The back sheet 14 typically resides on the lower surface of the absorbent material 18 as the absorbent article 10 is worn by a wearer, and can be constructed from any desired material which may be generally liquid-impermeable and water vapor permeable. Desirably, the back sheet 14 has a water vapor permeability of at least about 10,000 MOCON. Also, the back sheet 14 may have a water vapor permeability of at least about 25% of that of the cover sheet 12. In certain embodiments, the back sheet 14 may be permeable to liquid. Desirably, the back sheet 14 permits passage of air and moisture vapor out of the absorbent 10 while blocking passage of bodily fluid(s). An example of a suitable material is a micro-embossed, polymeric film, such as polyethylene, polypropylene or polyester, having a minimum thickness of no less than about 0.025 mm and a maximum thickness of no greater than about 0.13 mm. Bicomponent films can also be used, as well as woven and nonwoven fabrics which have been treated to render such fabrics liquid-impermeable. An example of another suitable material is a closed cell polyolefin foam, for example, a closed cell polyethylene foam. A specific example of a back sheet material is a polyethylene film such as that used in KOTEX pantliners and obtainable from Pliant Corporation, Schaumburg, Ill., USA.

A particularly well suited material for the back sheet 14 is a highly breathable stretch thermal laminate (HBSTL) material having a MOCON value of at least about 10,000, more particularly a value of 10,824. The HBSTL material can include a polypropylene spunbond material thermally attached to a stretched breathable film. For example, the HBSTL material may include a 0.6 osy ( $20.4 \text{ g/m}^2$ ) polypropylene spunbond material thermally attached to a  $18.7 \text{ g/m}^2$  stretched breathable film. The

breathable film may include two skin layers with each skin layer composed of 1-3 wt% EVA/catalloy. The breathable film may also include 55-60 wt% calcium carbonate particulates, linear low-density polyethylene, and up to 4.8% low density polyethylene. The stretched breathable film can include a thickness of 0.45-0.50 mils and a basis weight of 18.7 g/m<sup>2</sup>. The spunbond layer can be thermally bonded to the breathable film, and can have a basis weight of 20.4 g/m<sup>2</sup>. The spunbond layer can have a fiber denier of 1.5-3 dpf, and the stretched breathable film can be thermally attached to the spunbond material using any desired pattern which provides an overall bond area of at least about 15-20%."

Please replace paragraph 6, page 21, line 23 through paragraph 1 page 22, line 22 with the following:

**"First Code:** Articles included an absorbent layer of 70% cotton and 30% rayon with a density of about 1.37 g/cc. The cover sheet was a bonded carded web (BCW) material having a WVTR of about 52,612 MOCON value, an air permeability of about 762 cfm/ft<sup>2</sup> (cubic feet per minute per square foot), and a contact angle with water of between about 70 - 80 degrees. The back sheet material comprised an HBSTL material (as described above) having a WVTR of about 10,824 MOCON value, an air permeability of about 5 cfm, and a contact angle with water of between about 85 – 100 degrees. All pads were successfully flushed without dispersing or breaking-up and their buoyancy and sinking characteristics noted at the times set forth in the above procedure. The pads generally exhibited neutral buoyancy during flushing in that they tended not to flow on top of the water stream, but rather between the bottom of the piping and the top of the water stream. Also, upon being placed in the container after the flush test, the articles were generally suspended at various positions in the container and did not rise and float on the surface. 60% of the pads tested completely sank within 7 days.

**Second Code:** Articles included an absorbent layer of 60% cotton and 40% rayon with a density of about 1.2 g/cc. The cover sheet was a spunlace laminate material of rayon and PET/PP film with the film side facing out, as described above, a WVTR of about 39,947 MOCON value, an air permeability of about 0.76 cfm, and a

contact angle with water (film side out) of between about 90-110 degrees. The back sheet material comprised an HBSTL material (as described above) having a WVTR of about 10,824 MOCON value, an air permeability of about 5 cfm, and a contact angle with water of between about 85 – 100 degrees. All pads were successfully flushed without dispersing or breaking-up and their buoyancy and sinking characteristics noted at the times set forth in the above procedure. The pads generally exhibited neutral buoyancy during flushing in that they tended not to flow on top of the water stream, but rather between the bottom of the piping and the top of the water stream. Also, upon being placed in the container after the flush test, the articles were generally suspended at various positions in the container and did not rise and float on the surface. Between 95 - 100% of the pads tested completely sank within 7 days."